

New Jersey Department of Transportation
Bureau of Research
RESEARCH PROJECT
Request for Proposals
2011 Program

Date of RFP
8/9/2010

Closing Date
9/22/2010

Handheld Devices on Rail for Fare Collection and Communication

Project No. 2011-05

(Proposals must be prepared in accordance with NJDOT's *Information and Instructions for Preparing Proposals*. Please visit:

<http://www.state.nj.us/transportation/refdata/research/pdf/techpropresproj.pdf>

Revised Proposal Evaluation Forms are available for your information on the website.)

Proposals will be based on the merit of the information contained in the proposal. Budgets will be evaluated separately. Please place three (3) copies of the budget for this project in a separate sealed envelope.

1. RESEARCH PROBLEM STATEMENT, BACKGROUND AND OBJECTIVES

NJ TRANSIT would like to study the concept of providing rail crews with handheld devices to utilize onboard rail vehicles to generate tickets onboard for customer purchase, validate and/or process contactless transaction and as a means of communication. The handheld should have the capability of reading and processing open loop (contactless bankcards) and closed loop smart card transactions on board a multi-zone heavy rail system. Several issues that may be looked at include the use of wireless devices to generate tickets, complete transactions, connect to a central database, utilize contactless and magnetic media, and other potential uses for the technology. The study will also look at the efficiency of using the handheld devices, the ease of use for rail crews and customers, and provide a cost analysis for the implementation of the devices.

2. TASKS

[Provide a listing of appropriate general tasks divided into phases based on types of work (e.g., laboratory, field) or by year (e.g., year 1, year 2) or other appropriate milestones]

The NJDOT is seeking the insight of proposal responders on how best to achieve the research objectives. Proposers are expected to describe a research effort that can realistically be accomplished as expeditiously as possible. Proposals must present the proposers' current thinking in sufficient detail to demonstrate their understanding of the problem and the soundness of their approach for conducting the required research.

PHASE I – Literature Search

Conduct a literature search of the current state of the practice.

After the award of the project, a more comprehensive literature search should be conducted. At the completion of this literature search, the PI will make a presentation to the Research Project Selection and Implementation Panel to discuss their findings and to discuss the appropriate research approach.

PHASE II – Research Approach and Anticipated Results

A concept on how open/closed loop smart cards will be accepted on board heavy rail while taking into consideration the vast origin/destination pairs serviced on a daily basis. Provide a projection on the adoption rate and penetration of open loop contactless bankcards in the tri-state area. Clear description of how you will solve the problem and implement anticipated findings. Work may be divided into

phases (e.g., Laboratory, Field or Year 1, Year 2) as necessary to clarify tasks. *Exit Criteria* must be developed during this phase.

3. IMPLEMENTATION AND TRAINING PLAN

The PI must meet with the Research Project Selection and Implementation Panel (RPSIP) and other NJDOT units to present the findings and as appropriate train these personnel in the use the project results.

The PI will develop an implementation plan as per the guidelines provided by NJDOT Research Bureau.

4. DELIVERABLES:

[List of minimum deliverables necessary to complete the project]

- Presentation of Summary of Literature Search Results
- Presentation of the Research Approach and Anticipated Results
- Discussion to Support and Refine the Project Tasks
- Project work plan.
- Technical Memorandum on the survey results
- Technical memorandum on the measures that are working or not working
- Technical memorandum on actions taken
- Interim Status reports suitable for Senior Leadership if required
- Quarterly Reports and Final report with appropriate colored tables, graphs and charts in hard copy version, PDF file format, Word, and on CD ROM. Two copies plus one per RSIP member of each presentation, technical memorandum, draft final report and Final Report (plus 10 copies). The Final Report and Tech Brief are due three (3) months before the end date of the project to allow time for review by the Research Project Selection and Implementation Panel. Final Acceptance will be granted upon receipt of ten copies of the approved final report.

5. CONTRACT TIME:

The PI must provide the anticipated research study duration based on the proposed tasks. Consideration should be given to potential impediments so that adjustments are incorporated into the schedule minimizing the need for time extensions.

6. CONTACTS:

A meeting may be scheduled with interested parties after the RFP's are distributed to refine the objectives and deliverables and to promote a better understanding of the research needs. Questions on this topic **shall not** be directed to any Research Project Manager, Research Customer, or any other NJDOT person. All questions and answers shall be addressed **through email or if requested, at the pre-proposal meeting**. Contact Camille Crichton-Summers (Camille.CrichtonSummers@dot.state.nj.us) on or before August 25, 2010 if you would like to request a pre-proposal meeting.

7. DEADLINE

**Proposals (10 single-bound copies) are due at the NJDOT Bureau of Research
no later than 5:00 p.m. 9/22/2010**

Authorization to Begin Work: 1/3/2011 -- estimated or as negotiated

8. DELIVERY INSTRUCTIONS:

For private, paid messenger services such as Federal Express, DHL, UPS, etc., or for hand-carried deliveries:

2011 PROPOSAL-NJDOT
New Jersey Department of Transportation
Bureau of Research
1035 Parkway Avenue
Trenton, New Jersey 08625-0600

For U.S. Postal Service mail:

New Jersey Department of Transportation
ATTN: Camille Crichton-Sumners
Manager, Bureau of Research
PO Box 600
Trenton, New Jersey 08625-0600